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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,692	09/28/2001	Tsutomu Yamada	YKI-0078	4078

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EXAMINER

MULPURI, SAVITRI

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 06/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/966,692

Applicant(s)  
Yamda et al

Examiner  
First Last

Art Unit  
1234



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 17, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5, 7-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikuko et al (US 6255,775).

Ikuko et al discloses method of making electroluminescent display by the following process steps: Providing a substrate having anode "2" hole transporting layer "4, depositing electroluminescent material "7" over substrate by shadow mask with plurality openings "9" , from linearly extending source '11,12,13". Ikuko et al discloses denoting the distance between mask and substrate by " $d_1$ " and denoting distance between mask and emissive source is " $d_2$ " and also denoting pitch of the luminous elements is " $p$ " distance between emissive source is " $d_3$ ". Ikuko deduce the equation using four variable parameters  $d_1, d_2, d_3, p$  which means all the four parameters and dependent on one another. Ikuko disclose not moving the mask laterally as

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disclosed in the prior art (see 9 a- 9d) but longitudinal movement of mask is applied to adjust the distances  $d_1$ ,  $d_2$  and  $d_3$  and the pitch "p". Ikuko particularly teach linearly extending source 11,12,13 (see fig. 3 and fig 5 a-5c and related description).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuko et al in combination with Tonucci et al.

Ikuko et al does not teach semiconductor as a shadow mask. Tonucci et al discloses a method of depositing a material by using silicon carbide semiconductor as a shadow mask with plurality of holes to deposit materials on the substrate with high accuracy and precision . It would have been obvious to one of ordinary skill in the art to use semiconductor mask with plurality of openings to deposit material over the substrate in the invention of Ikuko with high precision and accuracy.

Claims 1-5, 7-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al in combination with Ikuko et al..

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Fukuzawa et al teaches forming organic electroluminescent display by the following process steps: Providing a substrate for forming electroluminescent array; providing a shadow mask "220" with plurality of holes over the substrate having pixel "212"; providing electroluminescent material source "240" over the mask. Depositing the electroluminescent material on the substrate by laterally moving the mask each time of the exposure. Fukuzawa does not teach mask being semiconductor material and relative movement of the mask and the substrate. Fukuzawa et al do not teach linearly extending source elongated in direction perpendicular to the relative movement of between said mask and material source.

Ikuko et al discloses method of making electroluminescent display by the following process steps: Providing a substrate having anode "2" hole transporting layer "4, depositing electroluminescent material "7" over substrate by shadow mask with plurality openings "9" , from linearly extending source "11,12,13". Ikuko et al discloses denoting the distance between mask and substrate by " $d_1$ " and denoting distance between mask and emissive source is " $d_2$ " and also denoting pitch of the luminous elements is " $p$ " distance between emissive source is " $d_3$ ". Ikuko deduce the equation using four variable parameters  $d_1, d_2, d_3, p$  which means all the four parameters are dependent on one another. Ikuko discloses not moving the mask laterally as disclosed in the prior art (see 9 a- 9d) but longitudinal movement of mask is applied to adjust the distances  $d_1, d_2$  and  $d_3$  and the pitch " $p$ ". Ikuko particularly teaches linearly extending source 11,12,13 (see fig. 3 and fig 5 a-5c and related description). It would have been obvious to one of

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ordinary skill in the art to use linearly elongated mask of Ikuko in the invention of Fukuzawa to avoid the movement of the mask in lateral direction during each exposure of the material , which is difficult maintain positional accuracy of the luminous material and the wafers(see col.2, lines 20-35).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukazawa in combination with Ikuko et al as applied to claims 1-5, 7-26 above, and further in view of Tonucci et al.

Fukuzawa et al does not teach forming semiconductor shadow mask. Tonucci et al teaches depositing nanosize patterning process by providing silicon carbide substrate with plurality holes and depositing the material through holes with accuracy and precision by the relative movement of the mask and the substrate. Tonucci et al further disclose using the position technique for organic materials. (See col. 60-67, fig 2B -2C and 4 claims, 2, 23, It would have been obvious to one of ordinary skill in the art to use silicon carbide mask with plurality of openings to deposit material over the substrate in the invention of Fukuzawa et al because of the advantage of depositing in large area substrate in small area in the order nanosize with accuracy and precision as taught by Tonucci et al.

Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mulpuri whose telephone number is 305-5184. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0956.

  
SAVITRI MULPURI  
PRIMARY EXAMINER